WILLKIE FARR & GALLAGHER LLP

1875 K Street, N.W.
Washington, DC 20006-1238

Tel: 202 303 1000
Fax: 202 303 2000

REDACTED – FOR PUBLIC INSPECTION

February 20, 2015

<u>VIA ELECTRONIC FILING</u>

Marlene H. Dortch, Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, D.C. 20554

Re: *Applications of Comcast Corporation, Time Warner Cable Inc., Charter Communications, Inc., and SpinCo for Consent to Assign or Transfer Control of Licenses and Authorizations*, MB Docket No. 14-57
REDACTED – FOR PUBLIC INSPECTION

Dear Ms. Dortch:

In response to questions by Commission staff and issues raised by panelists during the third session of the Commission's January 30, 2015 Economic Analysis Workshop (the "Workshop"),[1] Drs. Gregory L. Rosston and Michael D. Topper and Cornerstone Research prepared the enclosed note regarding the Commission's vertical foreclosure and bargaining models. This note provides further details supporting Drs. Rosston and Topper's statements during the Workshop and further analysis using the information and data submitted by Comcast Corporation ("Comcast") in response to the Commission's Second Information and Data Request.[2]

Comcast hereby submits a redacted, public version of this note. The **{{ }}** symbols denote where Highly Confidential Information has been redacted, and the **[[ ]]** symbols denote where Confidential Information has been redacted. A Highly Confidential version of this filing, including Highly Confidential and Confidential data files prepared by Cornerstone Research supporting the analysis and calculations in the note, has been submitted to the Office of the Secretary pursuant to the

[1] *See* Letter from William Lake, Chief, Media Bureau, to Marlene H. Dortch, Secretary, FCC, MB Docket No. 14-57 (Feb. 4, 2015) (*ex parte* notice for economist workshop).

[2] *See* Letter from Kathryn A. Zachem, Senior Vice President, Regulatory and State Legislative Affairs, Comcast Corporation, to Marlene H. Dortch, Secretary, FCC, MB Docket No. 14-57, Response to Request 122 (Feb. 5, 2015); *see also* Letter from William T. Lake, Chief, Media Bureau, to Kathryn A. Zachem, Senior Vice President, Regulatory and State Legislative Affairs, Comcast Corporation, MB Docket No. 14-57 (Jan. 15, 2015) ("Second Information and Data Request").

Second Amended Modified Joint Protective Order in this proceeding.[3] The Confidential and Highly Confidential versions of this filing will be made available for inspection pursuant to the terms of the Second Amended Modified Joint Protective Order.

Please contact the undersigned should you have any questions regarding this matter.

Respectfully submitted,

/s/ Michael D. Hurwitz
Michael D. Hurwitz
Counsel for Comcast Corporation

Enclosure

[3] *Applications of Comcast Corp. and Time Warner Cable Inc. for Consent to Assign or Transfer Control of Licenses and Authorizations*, Second Amended Modified Joint Protective Order, 29 FCC Rcd. 13799 (2014) ("Second Amended Modified Joint Protective Order").

Response to Arguments and Questions on the Commission's Foreclosure and Bargaining Models

February 20, 2015

Background

1. Dish Network Corporation ("Dish"), relying on its expert Dr. Zarakas, criticizes the vertical foreclosure and price effect analysis in our September 2014 Declaration ("Rosston-Topper September Declaration"). Dish claims we engaged in a "sleight-of-hand" to achieve our results and then relies on Dr. Zarakas' analysis to conclude that our analysis has "glaring flaws."[1] In this response, we address these criticisms and show that they are either mathematically wrong or irrelevant and do not affect our conclusions. We also respond to a request by the Commission staff regarding implementation of the Commission's models for the current transaction. In particular, we:

- Rebut Dr. Zarakas' argument that using a longer foreclosure duration would yield a lower critical departure rate by demonstrating that his analysis contained a fundamental mathematical error;
- Explain why Drs. Zarakas and Biglaiser's argument that using the 2008-2009 Fisher-Dish dispute would yield more reliable predictions about the departure rate during a foreclosure event is flawed, namely, because the marketplace has changed substantially and there is no evidence that Comcast would gain subscribers;
- Demonstrate why Dr. Zarakas' technical questions about how certain costs and profits should be incorporated into the Commission's models, including the amortization of one-time costs for customer acquisition, are irrelevant and do not change the result; and

[1] Reply of Dish Network Corporation, December 22, 2014, Section IX. In addition, ACA and its economist, Dr. Gary Biglaiser, also criticize portions of our implementation of the Commission's models. See "The Harms of Comcast-TWC Transaction II," Dr. Gary Biglaiser, December 23, 2014 ("Biglaiser Reply Comments").

- Address the Commission staff's request to understand the effect of diverted subscribers purchasing broadband and/or voice plans in addition to video plans in the context of a foreclosure event.

<u>Summary of Conclusions</u>

2. The bottom line from analyzing all these issues is that there is no support for the conclusion that the combination of Comcast and Time Warner Cable ("TWC") would cause vertical program access concerns.

3. As we discussed at the Commission's Economic Analysis Workshop on January 30, 2015 (the "Workshop"), Dr. Zarakas' analysis upon which Dish relies is simply incorrect. His analysis is based on a fundamental mathematical error in implementing the Commission's model – he used the cost to Comcast of a one-month foreclosure to calculate the critical departure rates *regardless* of the length of foreclosure. When this formulaic error is corrected, whether one uses the one-month rate from the recent CBS-TWC dispute or the dated six-month rate from the 2008-2009 Fisher-Dish dispute, the Commission's foreclosure model implies no program access issues, and, in particular, no program access issues for Dish. We discuss the error in Dr. Zarakas' calculation in **Section A** below.

4. The 2008-2009 Fisher-Dish dispute is more than six years old, and significant marketplace changes have occurred since then. Thus, using the dispute as the benchmark event for implementing the Commission's models in this transaction, as argued by Drs. Zarakas and Biglaiser, would yield an unreliable and biased estimate of the likelihood of subscribers switching from a foreclosed MVPD to Comcast in 2015 and beyond. In fact, both market facts and empirical analysis show that Comcast would be unlikely to gain many subscribers from foreclosing rival MVPDs after the current transaction. We discuss these issues in **Section B**.

5. At the Workshop, Dr. Zarakas raised several technical questions about how certain costs and profits should be incorporated into the Commission's models, such as whether the cost of acquiring a video subscriber should be amortized. We address these questions in **Section C** and show that they do not change the results of the Commission's models, because, among other things, (i) there is no mathematical difference in lifetime profit between amortizing a cost over

the life of a customer and expensing the cost using appropriate cost of capital and discount rates, and (ii) Dr. Zarakas' other technical criticisms of our method are incorrect and/or irrelevant.

6. At the Workshop, Commission staff asked us to examine how the results of the Commission's models might change if some video subscribers who switch to Comcast's video service from a rival MVPD after a foreclosure event would also be new purchasers of broadband and/or voice services from Comcast. We respond to the staff's inquiry in **Section D**, showing that, even after accounting for the possibility of such broadband and/or voice subscriptions, the Commission's models provide no support for a conclusion that the transaction raises program access concerns.

A. Dr. Zarakas' Calculation of Critical Departure Rates Is Wrong and, If Corrected, Would Reinforce Our Conclusion.

7. Dr. Zarakas argues that the one-month foreclosure duration used in our implementation of the Commission's foreclosure models is too short and that using longer foreclosure durations would yield lower critical departure rates, under which Comcast would have more incentive to withhold programming from rivals. However, his result is due to a fundamental mathematical error in his implementation of the Commission's model.

8. According to the Commission's Comcast-NBCUniversal Order, the formula below calculates the critical departure rates (d^*) for a temporary foreclosure, which accounts for both the costs and benefits to Comcast from withholding NBCUniversal programming from a rival MVPD.[2] The costs include Comcast's loss of license fees (*Fee*) and advertising revenues (*Ad*) over the duration of the foreclosure, with the amount of *Ad* and *Fee* growing as the foreclosure lengthens. The benefits include profits from each MVPD subscriber who switches to Comcast as a result of the foreclosure, calculated as a sum of the monthly profit of π over time.[3]

$$d^* = \frac{(1-a) \times Ad + Fee}{\alpha \times s \times \sum_{t=0}^{\infty} \frac{(1-c)^t}{(1+r)^t} \times \pi + Fee + Ad}$$

[2] FCC Comcast-NBCUniversal Order, Appendix B, ¶ 10.

[3] α in the denominator is the probability that a departing subscriber switches to Comcast (the "diversion rate"). s is the share of the incremental profits that accrue to the vertically integrated firm, which is 1 for the current transaction. r is the discount rate. c is the churn rate of the subscribers who switched to Comcast, which may vary over time depending on whether it is during the foreclosure, right after the foreclosure, or later (so it can also be written as c_t).

9. As the duration of foreclosure increases, both the costs and benefits of the foreclosure to Comcast increase. However, Dr. Zarakas' calculation makes the fundamental mistake of increasing the benefits associated with the longer foreclosure while keeping the costs (*Ad* and *Fee*) at the level associated with a *one*-month foreclosure. For example, when calculating the critical departure rate for a six-month temporary foreclosure of the NBC O&O to Dish in the New York DMA, Dr. Zarakas included only one month of costs in the numerator and denominator of the formula (in Cell E15 on the "Temp_num" tab and Cell F19 on the "Temp_den" tab), rather than the six-month costs, as he should have to implement the Commission's formula correctly.[4]

10. As a result, Dr. Zarakas substantially understates the critical departure rate for foreclosure events longer than one month, leading him to claim incorrectly that "the calculated values for critical departure rates decline as foreclosure duration increases (e.g., from one month to six months)"[5] and therefore to identify foreclosure concerns when there are none. Once this error is corrected, critical departure rates *increase* instead of decrease as foreclosure lengthens. Figure 1 below shows the results of correcting the error for critical departure rates of Dish for NBC O&Os. For example, Dr. Zarakas calculates the critical departure rate for a six-month foreclosure of the New York O&O to Dish as **{{ }}**%; the corrected critical departure rate for a six-month foreclosure of the New York O&O to Dish is more than four times as high, **{{ }}**%.

[4] NBC O&O Critical Departure Rates_Brattle Analysis.HIGHLY.CONFIDENTIAL.xlsx.

[5] Declaration of William P. Zarakas, December 22, 2014 ("Zarakas Comments"), ¶ 26.

{{

}}

11. The correctly calculated post-transaction critical departure rates for a six-month foreclosure exceed the actual departure rate of {{ }}% that Dr. Zarakas estimated from the Fisher-Dish event in almost all cases (and in all cases involving Dish),[6] as shown in Table 2 below.[7]

[6] Zarakas Comments, ¶ 31.

[7] The only exception is the hypothetical temporary foreclosure of CSN New England to telcos and RCN, which implies limited, if any, foreclosure concerns especially given the Commission's program access rules and RSN arbitration provisions.

{{

}}

12. Overall, whether one uses the one-month rate from the recent CBS-TWC dispute or the dated six-month rate from the 2008-2009 Fisher-Dish dispute, Dr. Zarakas' calculation, if done correctly, actually *reinforces*, rather than invalidates, our conclusion that the Commission's

foreclosure model does not provide any support for program access concerns in the current transaction.

B. The Fisher-Dish Dispute Does Not Provide a Reliable Actual Departure Rate Estimate for the Analysis of the Current Transaction.

13. Drs. Zarakas and Biglaiser argue that the six-month Fisher-Dish dispute during 2008-2009 should be used to estimate the actual departure rate for our analysis simply because it was a longer dispute.[8] However, that dispute occurred more than six years ago. Since then, the video distribution and programming marketplace has changed significantly, as we noted in our Declaration.[9] In particular, the departure rate estimate based on the Fisher-Dish dispute likely overstates the actual departure rate relevant to the analysis of Comcast's incentive or ability to foreclose rival MVPDs in 2015 and beyond when their contracts with NBCUniversal expire.

14. The key to measuring potential profitability of a foreclosure strategy is the number of subscribers that would be gained, which depends on the product of the departure rate from the foreclosed MVPD and the diversion rate to Comcast. Both of these rates likely have *decreased* over the past six years due to changes in the video marketplace. Even in 2008-2009, the Fisher-Dish dispute did not lead to **{{ }}**.[10] Withholding programming today and in the future likely would lead to even lower subscriber gains for Comcast given the plethora of options for consumers, some of which did not even exist in 2008-2009. While there may be some consumers who value specific programming so highly that they will switch MVPDs in a foreclosure scenario (so the departure rate may not be zero), the relevant issue is the share of consumers who would switch, and to Comcast in particular, both of which have likely declined since 2008-2009 due to the following marketplace changes.

15. First, consumers have more options for alternative programming if their MVPD loses access to a particular network today than they did in 2008-2009, which would reduce departure rates in a foreclosure event. Since 2008-2009, the amount, quality, and availability of

---

[8] Zarakas Comments, ¶¶ 28-39; Biglaiser Reply Comments, Section III.A.

[9] Rosston-Topper September Declaration, ¶ 131.

[10] See discussion below for the supporting analysis.

programming available from MVPDs and online have grown significantly.[11] Consumers also have significantly more options to access programming – online video services such as Netflix, Amazon, Hulu, and YouTube have grown tremendously since 2008-2009,[12] and the online video space will continue to grow with the addition of players like Dish, Sony, HBO, CBS, Viacom, and others.[13] As a result, consumers are more likely to switch to other programming (from a variety of sources) rather than to leave their MVPD in a foreclosure event. Dish's CEO agreed with this assessment when he recently stated that "the world is changing" and, even if Dish drops some popular programming like CNN, its subscribers may not churn because they can access similar programming from "plenty of other places."[14] He has also stated that, even if consumers lose access to some important programming like CBS from their MVPD service, they may not leave their MVPD but instead will discover and watch other programming.[15] Indeed, Dish has recently had several disputes with major programmers, such as CBS, Turner, and FOX, underscoring its understanding that it is less vulnerable to customer defections or other harms even without all the programming it had previously carried.[16]

---

[11] See, for example, WGAW/FMC Comments, p. 30. In addition, Netflix alone estimates that, as of December 2014, it had agreed to purchase $9.5 billion of streaming content (Netflix's 2014 10-K, p. 28), besides creating original content such as *House of Cards*.

[12] Netflix first began streaming video in 2007 and its domestic subscribers increased from 9.4 million in 2008 at the time of the Fisher-Dish dispute (Netflix's 2010 10-K, p. 22) to 37.2 million in September 2014 (Netflix's September 2014 10-Q, p. 17) and more since then. Amazon first launched Prime Instant Video to its paid Prime subscribers in February 2011. At the beginning of 2014, Amazon had more than 20 million Amazon Prime members, none of whom had that option at the time of the Fisher-Dish dispute. See Don Reisinger, "Amazon Streaming: What Works, What Doesn't," CNET, February 23, 2011. Jay Yarow, "Amazon Says It Had At Least 20 Million Prime Members," Business Insider, January 6, 2014.

[13] For example, Viacom just announced that it will be offering Nickelodeon online. See Arathy S. Nair and Jennifer Saba, "Viacom to Launch Video Streaming Service for Nickelodeon," Reuters, January 29, 2015.

[14] According to Mr. Ergen, Chairman of the Board for Dish: "Now there are plenty of other places for people to get news. In fact a lot of people get news not from TV but from their devices. . . . [T]here's going to be more diversity, particularly when you can get cartoons from Netflix, or you can get news from the Internet, or you can get a TV show a week later, or you can binge view all the shows in a way that you can't do easily on TV as you do it today. The world is changing." See David Lieberman, "Dish Network's Charlie Ergen Calls Loss of CNN and Turner Nets a "Non-Event", Deadline, November 4, 2014.

[15] Dish's Chairman commented that "there'll be customers on Time Warner Cable when they come back – whenever CBS comes back on Time Warner, they won't watch CBS as much. They'll watch some other shows because they'll realize they don't miss it or they've discovered new programming that they didn't know existed before." (Dish 2013 Q2 Earnings Call.)

[16] Shalini Ramachandran and Joe Flint, "Dish Network's Pugnacious Boss Racks Up TV Brawls," The Wall Street Journal, December 22, 2014. "In Latest TV Spat, Fox News Blocked From Dish Network," CNBC, December 22,

16. Moreover, if an MVPD decides to drop some popular programming, it could use the programming cost savings to help retain its subscribers by lowering prices,[17] providing other incentives to its subscribers (e.g., offer free HBO for a period of time), or offering alternative programming. For example, when Suddenlink chose to drop Viacom networks, such as MTV and Comedy Central, it replaced the lost programming with programming from other providers, including Crown Media Holdings and FOX.[18]

17. As networks put more of their programming online, consumers may have the option to watch some of the foreclosed programming on various online outlets (e.g., Hulu). Even if the online programming is shown on a delayed basis (e.g., one day or even one week later), it still gives consumers another option for viewing the programming and reduces their likelihood of leaving the foreclosed MVPD. Indeed, NBCUniversal continues to make many NBC programs available the next day for free on nbc.com and significant amounts of NBCUniversal broadcast and cable content on Hulu and Hulu Plus, in addition to programming available on other OVDs such as iTunes, Amazon Prime, and Netflix.

18. Overall, the market evidence suggests that the actual departure rate in response to the lack of particular programming will likely be lower in 2015 and beyond than in 2008-2009. Thus, it is not appropriate to use the six-year old Fisher-Dish dispute as the benchmark to analyze the expected actual departure rate for future hypothetical foreclosure events.

19. Additionally, even the departure rate estimated from the Fisher-Dish dispute (**{{ }}**%) does not necessarily mean a significant number of the subscribers departing the foreclosed MVPD would switch to Comcast as opposed to the numerous other distributors from whom they can choose today. In fact, in the Comcast-NBCUniversal transaction, Drs. Israel and Katz showed that there was **{{**

2014. It is also important to note that having a carriage dispute is not necessarily evidence of a vertical competitive issue, as none of the programmers listed with whom Dish had a dispute is vertically integrated.

[17] The Wall Street Journal, September 4, 2013, "Dish, Disney Gird for Showdown Over ESPN": "By dropping a sports channel, a pay-TV provider could have a 'materially lower price for customers and while they'll lose customers initially, they will gain customers long term'" (quoting Mr. Ergen).

[18] Victor Luckerson, "This Small Cable Operator May Help Unravel the Pay TV Industry," Time, October 1, 2014.

}}.[19] Taken together, the combination of the departure rate and the diversion rate from the Fisher-Dish dispute suggests that Comcast would not gain any significant number of subscribers in a similar future foreclosure event.[20]

20. Moreover, the likelihood of a rival's subscriber switching to Comcast would likely be even lower today even after the Commission's model controls for the subscriber shares of different MVPDs. For example, MVPDs may have unique features such as Dish's DVR technology and telcos' video-broadband bundles that make their subscribers even less likely to switch than they were six years ago. In addition, with the growth of OVDs, a departing subscriber has the additional options of cord-cutting or cord-shaving and is thus even less likely to switch to Comcast in 2015 and beyond than he or she was in 2008-2009. If the Commission were to use the same proportional diversion assumption it adopted in its Comcast-NBCUniversal Order, it would be overstating the diversion rate; at a minimum, the Commission should modify its models to reflect this new reality, including the increased availability of alternatives to traditional MVPDs.

21. Finally, it bears emphasis that the combination of the Fisher-Dish dispute and the Commission's bargaining model did not provide a reliable benchmark for predicting the effect of vertical integration on the pricing of NBCUniversal programming after the Comcast-NBCUniversal transaction.[21] In particular, the Commission's empirical framework for analyzing actual programming prices, when applied to NBCUniversal networks, shows that the vertical integration in the Comcast-NBCUniversal transaction has not resulted in any price increase for those networks.[22] This empirical finding of no vertical price effect contradicts the theoretical

---

[19] Israel-Katz February 2010 Report, ¶¶ 96-104 and July 2010 Report, ¶¶ 239-256. Using internal Comcast data, Drs. Israel and Katz ran a difference-in-differences analysis similar to what Dr. Zarakas ran on the internal Dish data and found that **{{**

}}.

Both estimates may be correct – **{{**
}}.

[20] The Commission ignored the evidence of no subscriber gain and relied on assumptions about diversion in relation to market shares. While, at times, assumptions may be necessary, it seems inappropriate to ignore market evidence that contradicts the assumptions. In our September Declaration, we noted these issues but followed through on the Commission's request to update its earlier models. Rosston-Topper September Declaration, ¶ 129.

[21] Comcast-NBCUniversal Order, Appendix B, ¶¶ 48-52.

[22] Rosston-Topper September Declaration, Section III.C.1.

prediction of the Commission's bargaining model in the Comcast-NBCUniversal Order, which was based in part on the departure rate estimate from the Fisher-Dish dispute.[23] Therefore, there is no empirical support for applying the Fisher-Dish event to the Commission's bargaining model in the current transaction.

22. Dr. Biglaiser criticized our implementation of the Commission's empirical framework for analyzing programming fees that found no price effect. In particular, he argues that in our implementation of the Commission's framework, the control group in the cable network regression includes popular networks such as ESPN, ESPN2, and the NFL Network, "whose growth has increased dramatically over the treatment period."[24] However, as we discussed at the Workshop, there is no theoretical rationale to exclude networks in an ad hoc manner, and the empirical evidence does not support his claim.[25] Higher-ranked networks may not have higher growth rates of programming fees.[26] In any event, the regression results do not change when excluding the control networks identified by Dr. Biglaiser, as shown in Table 3 below. As was true in Table III.C.1 of our September Declaration, none of the specifications finds a statistically significant positive correlation. All of the relevant coefficients remain negative, meaning that, even if Dr. Biglaiser's criticism were valid, there is no effect on our finding of no price increase for NBCUniversal networks due to vertical integration after the Comcast-NBCUniversal transaction.

---

[23] Rosston-Topper September Declaration, Section III.C.1.

[24] Biglaiser Reply Comments, p. 16.

[25] Excluding specific networks based on some ad hoc rules may raise sample selection issues and introduce endogeneity bias and other errors to the data. Such data manipulation is neither reasonable nor scientific.

[26] For example, SNL Kagan data show that the average growth rates of programming fees for ESPN and ESPN2 between 2011 and 2013 were **[[** **]]**, lower than lower-ranked networks such as Spike TV, TV Land, and Investigation Discovery.

[[

]]

23. Overall, market facts and empirical evidence regarding departure rates, diversion rates, and programming fees after the Comcast-NBCUniversal transaction all suggest that the transaction will not lead to any vertical foreclosure concern or any price increase for NBCUniversal programming.

C. Amortization of Acquisition Costs and Other Technical Issues Raised by Dr. Zarakas Do Not Change the Results of the Commission's Models.

24. Comcast would incur customer acquisition costs in order to attract video subscribers from a rival MVPD. Because this cost is incurred at the beginning of a subscriber's tenure with Comcast and does not have any residual value afterwards,[27] it makes economic sense to treat the

---

[27] Unlike a set-top box that can be reclaimed and leased to another subscriber if a subscriber leaves Comcast, the value generated by the acquisition cost becomes zero with the subscriber departure.

cost as an expense at the time of the acquisition.[28] Using actual cash flows is **{{**

}}.[29]

25. At the Workshop, Dr. Zarakas argued that the acquisition cost should be amortized over the tenure of a subscriber as the Commission did in the NewsCorp-Hughes Order. He claimed that by treating acquisition costs as an expense at the time of acquisition, the benefits of foreclosure turn out to be negative or very low in the first month or first year of a subscriber's tenure with Comcast, which, he claimed, is one reason why our calculation finds the foreclosure to be unprofitable.[30] However, correctly amortizing acquisition cost is mathematically equivalent to treating acquisition cost as a one-time expense, which we have done. Thus, Dr. Zarakas' amortization criticism is incorrect and irrelevant – as shown below, the results do not change.

26. The Commission's NewsCorp-Hughes Order stated that:

- "We also must account for the fact that subscriber acquisition costs are a one-time expense associated with the acquisition of a new customer. To do this we follow the standard method . . . of *amortizing those costs over the length of time that the subscriber is expected to stay* with DirecTV."[31]
- "[W]ith temporary foreclosure, the timing of the various effects becomes important. Because some of the consumers that switch to DirecTV will return to their previous MVPD after the period of withdrawal, *we must account for the timing of the subscriber acquisition costs as well as the timing of consumers' return to their original MVPD*. We adopt a discounted cash flow approach to allow us to compare these benefits and costs over time."[32]

---

[28] Rosston-Topper September Declaration, Technical Appendix, ¶ 42.

[29] Comcast Customer Lifetime Value, October 2013, p. 22.

[30] FCC Workshop Transcript, January 30, 2015, at 230:16-231:2, 231:17-232:17.

[31] FCC NewsCorp-Hughes Order, Appendix D, ¶ 3 (emphasis added).

[32] FCC NewsCorp-Hughes Order, Appendix D, ¶ 13 (emphasis added).

27. The Commission's statements are consistent with the view that the profit calculation must account for the fact that a switching subscriber in a foreclosure event has a different expected customer lifetime than a regular Comcast subscriber, because when the foreclosure ends the switcher would leave Comcast (or "churn back") at a much higher rate than the churn rate of an average Comcast subscriber. If one properly accounts for the expected "churn back," then the amortized monthly acquisition cost must be such that the sum of its discounted present values over the switcher's tenure is equal to the acquisition cost incurred at the beginning of the switcher's tenure, as shown below.

$$Acquisition\ Cost = \sum_{t=0}^{\infty} \frac{(1-c_t)^t}{(1+r)^t} \times Amortized\ Monthly\ Acquisition\ Cost$$ [33]

The equality makes it clear that whether one treats the acquisition cost as a one-time expense (the left-hand side of the equality) or a stream of amortized expenses (the right-hand side of the equality), the effect of the cost on the Commission's models is mathematically equivalent by definition.

28. As a simple example, assume that customer acquisition cost is $120 and subscribers stay for one year with a 0% interest rate. The amortized cost each month for 12 months using a 0% interest rate would be $10, and discounting each month's charge back to the present with a 0% discount rate would lead to $120. Regardless of the interest rate used, the two would be equivalent as long as churn is correctly implemented in the equation. Dr. Zarakas also made a similarly flawed argument about accounting for profits over time. Like his criticism regarding acquisition cost, his argument about profits does not affect the result.[34]

---

[33] r is the monthly discount rate; c_t is the monthly effective churn rate.

[34] Dr. Zarakas argued that we did not use a single average profit throughout a subscriber's tenure with Comcast, but instead used different profits for the first year and the rest of a subscriber's tenure with Comcast. *See* FCC Workshop Transcript, January 30, 2015, at 227:17-231:2. However, as we explained at the Workshop, our approach reflects cash flows and is **{{** **}}**. For example, because subscribers are usually given a promotional rate during the first year, Comcast's profits are lower in the first year than in later years. If one uses a single average profit throughout the tenure of a subscriber, one must account for the differences across years and how a switcher that Comcast gains in a foreclosure likely has a higher chance of churn back when the foreclosure ends. Similar to what we have shown for the acquisition cost, using the average profit (correctly calculated) will yield the same results in the Commission's model as our results.

29. In addition, Dr. Zarakas argued that we did not use **{{**

}} but instead used a different series of data to calculate the cost per new connect.[35] He claims that, by doing so, we did not spread the cost across all customers but instead just on new connects, which led us to reduce profit and find foreclosure to be unprofitable. However, Dr. Zarakas' claim is baseless, as he mischaracterized the data. We used Comcast's actual costs of acquiring a *new* connect.[36] So, contrary to Dr. Zarakas' claim, we did not **{{**

}} and the resulting cost per new connect is exactly the input that the Commission's model requires. Dr. Zarakas' critique here is simply wrong.

30. Dr. Zarakas also claimed that we did not include installation revenue in our calculation.[37] He is mistaken here as well – we included installation revenue in the calculation of the net acquisition costs, because it is a **{{**
}}[38]

D. Accounting for Broadband and/or Voice Profits from a New Video Subscriber Does Not Change Our Conclusions.

31. At the Workshop, Commission staff asked us to examine how the analysis would be affected if a subscriber who switches to Comcast's video service in a foreclosure event (a "video switcher") might also switch to Comcast's broadband and/or voice services and thus increase Comcast's profit from foreclosure. As explained below, accounting for the additional profits would not change the conclusion that the current transaction will not raise foreclosure or vertical price effect concerns.[39, 40] Moreover, as we noted in Section B above and in our September

---

[35] FCC Workshop Transcript, January 30, 2015, at 230:16-231:2, 231:17-232:17.

[36] Rosston-Topper September Declaration, Technical Appendix, ¶ 42, footnote 37 and associated backup data.

[37] FCC Workshop Transcript, January 30, 2015, at 230:16-231:2, 231:17-232:17.

[38] Rosston-Topper September Declaration, Technical Appendix, ¶ 42.

[39] The broadband and voice profits used in the analysis here are calculated in the same way as we calculated the video profit in our September declaration. We understand from the Commission's Second Request for Information ("RFI") #123 that the Commission staff is also interested in knowing to what extent the costs included in our profit calculation are variable costs versus fixed costs. As we explained at the Workshop, the costs included in our profit

Declaration,[41] the Commission's empirical framework for analyzing actual programming prices applied to NBCUniversal programming shows that the vertical integration that arose in the Comcast-NBCUniversal transaction has *not* resulted in any price increase for NBCUniversal programming. This empirical finding of no vertical price effect contradicts the theoretical prediction of the Commission's bargaining model in the Comcast-NBCUniversal Order, which suggests that the bargaining model does not provide a reliable assessment of the program access issues for NBCUniversal programming in this transaction.

32. In the Comcast-NBCUniversal transaction, when broadband and voice profits from video switchers to Comcast were incorporated into the Commission models, it was assumed that those video switchers would purchase Comcast's broadband and voice products according to the purchase pattern of an average subscriber who joined Comcast recently. That is, the shares of those video switchers who would purchase video-only, video-broadband bundle, and video-

---

calculation are variable or "step-variable" costs (i.e., costs that would increase with a significant increase of subscribers) identified in Comcast's Customer Lifetime Value analysis. Because the Commission's models would only imply a foreclosure concern if Comcast is expected to gain a significant number of subscribers from foreclosure, it is appropriate to treat these costs as variable costs. We refer Commission staff to Comcast's response to RFI #123 for additional details regarding our treatment of these costs.

[40] At the Workshop, Professor Rogerson asked us why our estimated video margin is lower than the video margin estimated by Craig Moffett in 2009. As we explained at the Workshop, our calculation is based on 2014 revenue and cost data from Comcast and an October 2013 Comcast Customer Lifetime Value document. It is not clear what source of data was used by Mr. Moffett in deriving his estimate. Also, we do not know whether Mr. Moffett's estimate is consistent with the definition of the profit margin in the Commission's models. Moreover, as noted in our April and September Declarations and in Section B above, competition from DBS and telco MVPDs (and potentially OVDs) has increased significantly since 2009. There has also been a significant increase in programming costs. As a result, it is not surprising that Comcast's video margin has declined since 2009. In fact, Mr. Moffett's own estimate of the video margin, whether or not it is relevant for our implementation of the Commission's model, has declined since 2009 (from the $43 cited by Professor Rogerson to the $37 cited by Professor Biglaiser). In a recent note, Mr. Moffett explicitly states that "[o]ver the past two years, video gross profit has begun to contract meaningfully at all the major cable operators" and "gross profit per subscriber is getting worse, driven down by both spiraling programming costs *and* the spin down into smaller service bundles." (MoffettNathanson Research Note, February 17, 2015, p. 13, emphasis in the original.)

Moreover, in our implementation of the Commission's models, the calculated percentage price increase is based on the 2014 video margin and is relative to the 2014 programming fees. As discussed in our previous declarations, programming fees have been increasing rapidly in recent years and the trend is expected to continue, while video margins have declined (as Mr. Moffett apparently shows). Thus, to the extent programming fees will continue to increase and video margin will continue to decrease in 2015 and beyond, the price effect implied by the Commission's bargaining model will be an even smaller percentage of the expected programming fees without the transaction, and be further below the Commission's 5% threshold.

[41] Rosston-Topper September Declaration, Section III.C.1.

broadband-voice bundles from Comcast was assumed to be the same as the corresponding shares among Comcast subscribers added in recent months.[42]

33. However, this assumption is problematic because, with respect to their preference for Comcast's products, video switchers to Comcast in a hypothetical foreclosure are different from an average subscriber who joined Comcast recently. In particular, these video switchers have revealed their preference for a non-Comcast video service before the hypothetical foreclosure. To the extent they have subscribed to a non-Comcast broadband and/or voice service, they have revealed their preference for the non-Comcast provider(s) of those services as well. Moreover, these video switchers are assumed to leave their MVPD provider due to a loss of specific withheld NBCUniversal programming, and not for any other changes in their video, broadband, or voice services. Because these video switchers have revealed preferences different from that of an average subscriber who joined Comcast recently and they are switching to Comcast for a particular reason that may not be applicable to an average recent Comcast subscriber, they are likely quite different from that group. Therefore, the purchase pattern of video, broadband, and voice services by average subscribers who joined Comcast recently is not applicable to these video switchers.[43] Below, we discuss the expected switching to Comcast's broadband and/or voice services for video switchers from different types of MVPDs.

34. A video switcher from a foreclosed DBS MVPD likely has a very low probability of switching to Comcast's broadband and/or voice services. Using broadband service as an example, the video switcher would be in one of the following three scenarios pre-foreclosure:

[42] The Comcast-NBCUniversal Order (Appendix B, ¶ 22) cites profit margin calculated by Drs. Israel and Katz in their July 2010 report (¶ 60), which is based on their February 2010 report (¶ 36). In the February 2010 report (¶ 36), Drs. Israel and Katz calculated the average margin in two ways. In the approach underlying the rate adopted by the Commission in the Comcast-NBCUniversal Order, they computed "the weighted average profit margin across the different packages of products (video-only; video and high-speed data; and video, high-speed data, and voice)" based on "the distribution of new Comcast 'connects' over the past six months across the one-, two-, and three-service packages."

[43] Drs. Israel and Katz made a similar observation in their February 2010 report (¶ 36): "those consumers who switch to Comcast in order to obtain access to the NBC broadcast signal due to foreclosure of another MVPD would presumably already have data and voice services from another provider, and a decision to switch multiple products would potentially increase transaction costs. Hence, the historical mix of products selected by new subscribers may substantially overstate the percentage of new video subscribers who would take high-speed data or voice services from Comcast in response to the loss of NBC carriage by another MVPD." As a result, they considered "an alternative case in which the percentage of new subscribers taking two or three products due to foreclosure is half that observed among recent connects (with the percentage taking only video higher by a corresponding amount)."

- Scenario 1: She has no broadband service;
- Scenario 2: She has broadband service from Comcast; or
- Scenario 3: She has broadband service from another provider.

35. In scenario 1, the video switcher has shown she is not interested in having a broadband service (either from Comcast or from an alternative), which is unlikely to change after switching to Comcast's video service due to a hypothetical foreclosure. In scenario 2, the video switcher already subscribes to Comcast broadband so will not bring additional broadband profit to Comcast. In scenario 3, she has a low chance of switching to Comcast broadband because she, unlike an average Comcast subscriber, has revealed a preference for an alternative broadband service (and may have a contractual disincentive to switch in some cases).

36. To a video switcher in scenario 3, the convenience of "one-stop shopping" associated with Comcast's video-broadband bundle is unlikely to have much of an effect on the attractiveness of Comcast broadband – the switcher has shown that she does not put a lot of value on one-stop shopping by already having video and broadband services from different providers. If some DBS subscribers did value one-stop shopping and had a DBS video/telco broadband bundle under some joint marketing deal between the DBS provider and telco, the bundle should give them extra incentive to stay with the DBS provider and telco in the case of a foreclosure. Thus, they should account for a small share of the video switchers. Similar logic applies to the likelihood of a video switcher also purchasing voice service from Comcast. In addition, there are a growing number of households who do not have wireline voice service at all.[44]

37. In short, there is no evidence that video switchers from DBS MVPDs would switch to Comcast's broadband/voice service.

38. Next, we examine telco and cable overbuilder subscribers. Telco/cable overbuilder video subscribers have a revealed preference for their existing provider's broadband service. For example, almost all of AT&T's video subscribers subscribe to broadband services from AT&T,

---

[44] Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July-December 2013. See http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201407.pdf.

and there are very few subscribers who only have video service from AT&T.[45] Given their revealed preference, telco/cable overbuilder video subscribers are not likely to switch to Comcast's broadband service even if they were to switch to Comcast's video service, unless they have a strong preference for bundles of service from the same provider ("bundle-preferring customers").

39. The preference of bundle-preferring customers has two opposite effects on the likelihood of such customers switching to Comcast's video service and subscribing to Comcast's broadband service in a foreclosure event:

- Effect 1: Bundle-preferring telco/cable overbuilder customers are less likely to leave the provider due to a lack of programming because they value the provider's broadband service and value having the bundle of broadband and video service from the provider. Put another way, the existing provider has a "stickier" relationship with the customer and – even if the customer is concerned about the temporary or permanent loss of particular programming – the provider has additional means to retain the customer (e.g., by offering a broadband speed or equipment upgrade at no additional charge, in addition to a video upgrade or other promotions).
- Effect 2: If bundle-preferring telco/cable overbuilder customers do choose to switch to Comcast's video service, they are more likely than other switchers to purchase Comcast's broadband service given their preference for bundles.

40. We are not in a position to estimate with any certainty the share of bundle-preferring telco/cable overbuilder customers or how they would switch to Comcast's video/broadband service in a foreclosure event. As a result, we have to make assumptions to assess the effect of any broadband/voice profits Comcast might earn from telco/cable overbuilder video switchers.

[45] For example, according to AT&T's September 2014 10-Q, it has 12.4 million total U-verse subscribers (broadband and video), including 12.1 million broadband and 6.1 million video subscribers. Among AT&T's U-verse video subscribers, 95.1% (5.8 million out of 6.1 million) also take AT&T's broadband service. We assume Verizon's subscribers are similar to those of AT&T (Verizon's financial statements do not report details of its video and broadband businesses). We assume that the small number of telco subscribers who do not have a telco broadband service will not generate additional broadband or voice profits to Comcast since they either already have Comcast broadband or do not have a broadband service at all (and revealed their preference for not having broadband service).

41. Effect 1 above means that bundle-preferring customers, due to their "stickiness", should account for a small share of the total departing telco/cable overbuilder subscribers in a foreclosure event.[46] Moreover, even bundle-preferring video switchers may not switch to Comcast because there may be other non-telco sources for a video-broadband service bundle. For example, bundle-preferring telco customers might switch to DirecTV if DirecTV offers a video-broadband bundle based on a joint sales agreement with AT&T (or, where available, might switch to a cable overbuilder's bundle). Therefore, we assume that, among telco/cable overbuilder video switchers to Comcast, 50% are bundle-preferring. The 50% assumption is somewhat similar to the assumption used by the Commission in the Comcast-NBCUniversal Order that DBS subscribers would have a diversion rate lower than the proportional diversion rate because of their revealed preference for DBS video service.[47]

42. To account for Effect 2, we assume that if a bundle-preferring telco/cable overbuilder video switcher does choose to switch to Comcast video, then she will switch to Comcast's broadband service as well. We also assume that video switchers to Comcast who do not care about one-stop shopping will not purchase Comcast's broadband service given their revealed preference for telco/cable overbuilders broadband service.

43. Overall, the above assumptions imply that the share of telco/cable overbuilder subscribers who would switch to Comcast and purchase broadband service from Comcast is $0.5\times d\times\alpha$, where d is the departure rate of telco/cable overbuilder subscribers and α is the diversion rate of departing telco/cable overbuilder subscribers to Comcast. In addition, we assume that if a telco/cable overbuilder video switcher purchases video and broadband services from Comcast, the probability that she also purchases Comcast's voice service is equal to the share of Comcast's video-broadband customers who also purchase Comcast's voice service.[48] We assume no

[46] The stickiness of the bundle-preferring subscribers implies that they would have a significantly lower departure rate than the departure rate of DBS or cable MVPD subscribers in a blackout event. Therefore, it would not be reasonable to assume that bundle-preferring subscribers would account for a large share of the departing telco/cable overbuilder subscribers in a foreclosure. If one nonetheless assumes that a large share of the departing telco/cable overbuilder subscribers are bundle-preferring subscribers, then the overall departure rate of telco/cable overbuilder subscribers in that scenario is likely lower than that of DBS or cable MVPD subscribers.

[47] Comcast-NBCUniversal Order, Appendix B, ¶¶ 14-15.

[48] Comcast's video-broadband customers include those who purchase just the video-broadband double-play bundle, as well as those who purchase the video-broadband-voice triple-play bundle. The latter group's share in the total

telco/cable overbuilder video switchers will purchase a video-voice bundle (without broadband service) from Comcast.[49]

44. Using the assumptions above, we have incorporated the additional broadband and voice profits from video switchers to Comcast into the Commission's bargaining and foreclosure models. Table 4 below shows that, even accounting for the potential for such broadband and voice profits, the Commission's bargaining models imply price increases from the transaction of less than 5% in all but two of the cases.[50] The result of the Commission's foreclosure model also does not raise any program access concerns.[51]

45. Again, we note that the Commission's foreclosure and bargaining models are not reliable in predicting the program access issues related to NBCUniversal programming – the models predicted that the Comcast-NBCUniversal transaction would lead to foreclosure and price increases for NBCUniversal programming, which did not occur. Moreover, even incorporating possible additional profits from broadband and voice service does not provide support for the conclusion that there are program access concerns from the transaction.

---

video-broadband customers (the sum of the two groups) is the share of Comcast's video-broadband customers who also purchase Comcast's voice service.

[49] As of June 2014, only **{{ }}**% of Comcast's video subscribers purchased a video and voice double-play bundle. See Comcast RFI Exhibit 4.8(b).

[50] The two cases are AT&T and Verizon for the NBC O&O station in Los Angeles. However, this is not a concern given that AT&T and Verizon typically negotiate fees for all NBC O&O stations as a package, and the estimates for all NBC O&O stations do not raise any issues.

[51] For the Commission's foreclosure model, the post-transaction critical departure rates are also larger than the estimated actual departure rates of **{{ }}** in all cases except for CSN New England in the case of telcos and RCN. As we noted previously, this implies limited, if any, foreclosure concerns, especially given the Commission's program access rules and RSN arbitration provisions.

{{

}}

Conclusion

46. Overall, our analysis shows that the Commission's models do not provide support to conclude that the combination of Comcast and TWC would lead to vertical program access concerns. The models the Commission relied on in 2011 did not predict the direction of price changes resulting from the Comcast-NBCUniversal transaction and are, as we discussed at length in our earlier declarations, unreliable for predicting the outcome of the Comcast-TWC transaction. However, even ignoring that fact, the models do not provide any support for conclusions similar to those the Commission reached in 2011. Criticisms of our work by opponents are either simply wrong or irrelevant and do not change our conclusions, nor does accounting for the possibility of additional broadband and/or voice profits from a video switcher.